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# Factors Involved in Early Age Dental Visits

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FACTORS INVOLVED IN EARLY AGE DENTAL VISITS

A Capstone Experience/Thesis Project

Presented in Partial Fulfillment of the Requirements for

the Associates of Science Degree with

Honors College Graduate Distinction at Western Kentucky University

By

Lillian Brooke McNeal

\*\*\*\*\*

Western Kentucky University  
2014

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## ABSTRACT

Today, more children are diagnosed with Early Childhood Caries (ECC) than at any other time in modern history. It is noted that Early Childhood Caries (ECC) is now the most common infectious disease among children and occurs 5 times more than asthma (America Academy of Pediatric Dentistry, 2014). Considering the extent of this disease, it is imperative to determine the cause of it and factors involved in the control.

In order to begin this study, one must first analyze different patients and their living conditions, along with the frequency of dental visits and when the first dental visit occurred. What can be done to stop the growing incidence of ECC? To answer this question, an interview session will take place with forty parents of six-year-old children to gather demographic and background data. After a detailed interview with these parents, the researcher will discuss important home dental care tips and explain the importance of visiting a dentist as early as possible to ensure prevention of cavities or trauma. The results from the demographic questions will be compared to the results from the interview. Once a correlation is determined, the researcher will be able to interpret the findings for dissemination.

Based on the results, the average age for a child's first dental visit was at the age of four. Age three was the age present that parents believed was the

appropriate age for a child's first visit, as well as the average age of a child's first dental visit with caries present. These results show that most parents are simply unaware of the fact that their child should visit the dentist by age one. Most parents thought ages three and up were better since the child understood more of what would be going on. Unfortunately at this age any decay present could have been prevented if the child had an evaluation at an earlier age. The parents would also be more informed on how to take care of their child's teeth if they brought the child to visit the dentist right after the eruption of the first tooth. Prevention is key in promoting good oral health in children.

*Keywords:* Early Childhood Caries, preventive dental care, *Streptococcus mutans*, early age dental visits, baby bottle tooth decay

Dedicated to the WKU Dental Hygiene Class of 2014  
and our Faculty and Staff that helped make our dreams a possibility.

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## VITA

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## FIELDS OF STUDY

Major Field: Dental Hygiene

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## CHAPTER 1

### INTRODUCTION

Today, more children are diagnosed with Early Childhood Caries (ECC) than at any other time in modern history. It is noted that ECC is now the most common infectious disease among children and occurs five times more frequently than asthma (America Academy of Pediatric Dentistry, 2014).



One rare, but significant consequence of ECC is death. When decay is left untreated in the mouth, it can cause infections, which can then spread throughout the body. The most commonly noted infections are those that began in the mouth and ended in the brain. Jacqueline Fox (2013) discusses a case of a twelve-year-old boy, Deamonte Driver, who died August 25, 2007 from a brain infection caused by an infected tooth. If the child had taken preventive care and had the tooth with severe decay removed, the infection would have ceased. Based on this information,

the cost of an extraction would have been around \$80, while this child's parents spent much more through extensive brain surgery, hospitalization, and finally death. Death may be an extreme and rare case, but children with ECC do often experience symptoms of pain. Pain can interrupt the quality of a child's life by affecting their ability to learn, eat, play, and sleep. The child is more often likely to miss school or have a lack of attention in school when pain is not resolved. Decay that is untreated and pain that is not resolved, often shows signs of neglect from the parents. The longer the pain is untreated, the more costly the treatment can be to the patient. A lack of prevention and an increase in decay also sets a child up for an adulthood of troubled teeth. Although there are many discouraging effects about ECC, the good news is that this disease is entirely preventable. This is why it is of high importance to promote early dental visits in hopes of better preventive methods.

Considering the extent of this disease, it is imperative to determine the cause and factors involved in the control of ECC. These are questions that should be asked in order to find a resolution to this problem. In order to begin this study, one must first analyze different patients and their living conditions, along with the frequency of dental visits and when the first dental visit occurred. So why has ECC not been controlled? The main point may be that parents are unaware that this infectious disease even exists. The cause of the disease can be attributed to many sources. *Streptococcus mutans* is the bacterium that leads to dental caries, but how is it introduced in the oral cavity? The main source is due to sugary drinks and snacks, especially when a baby has continual access to a bottle of milk or juice. When the sugar is continuously soaked on the enamel, the tooth begins to decay. Most parents

are simply unaware of these harmful habits. Therefore, having a dental visit by age one is highly important. Not only can the dentist check to make sure everything is developing properly, but he or she can also educate parents on how to prevent caries. Examples include eliminating sugary sources or making sure to wipe the teeth with a wash cloth/soft toothbrush after the consumption of sugary foods. Making visits at an early age will also eliminate fear in going to the dentist for most children.



What's wrong with this picture?!

### **CE/T Statement**

What can be done to stop the growing incidence of ECC? ECC has become a prevalent issue today and will most likely continue to rise unless the source of the problem can be addressed through education. Many families do not have dental insurance, time, or a means of getting children to a dental office at an early age. Other parents believe that the primary dentition is not as important as the permanent and therefore do not believe that it is necessary to take their children to

the dentist at an early age. These assumptions and barriers are a leading cause as to why the prevalence of ECC is increasing. With this study, the researcher will attempt to discover factors regarding parents' perceptions of the importance of dental prevention at an early age and how a child who visits the dentist at an early age may be less susceptible to ECC.

## CHAPTER 2

### REVIEW OF LITERATURE

This Review of the Literature will examine recent studies to help direct the current study. Current studies have found that ECC is most often associated with children in a lower socioeconomic status and children who have waited until a later age to have their first dental visit. The goal of this study is to better identify specific factors so appropriate preventive measures can be planned and implemented.

Savage, Lee, Kotch, and Vann (2004) investigated preschool-aged children to determine if early dental visits reduced the costs of dental services in later years. The design of the study utilized a longitudinal, retrospective, and cohort approach. The study took place in North Carolina and was targeted towards patients enrolled in Medicaid. Trends were noted in this study between children who had dental visits prior to age one compared to those who had their first dental visits between ages two through five.

Savage, Lee, Kotch, and Vann (2004) based their research on children from birth to age five. The design was based on four large administrative datasets from Medicaid patients. The measurements were based on the type of use and dental related costs. There were a total of 53,591 participants in the study who were all born in 1992. The research was accomplished through a longitudinal study that followed the children's dental habits and results from birth to age five.



The results from Savage, Lee, Kotch, and Vann (2004) suggested that children who had their first dental visit by the age of one were likely to have more subsequent revisits and fewer emergency visits. Those who waited until age two or three were more likely to have subsequent visits but were also still prone to restorative and emergency visits. The costs for those who started visiting the dentist at an early age were much lower than those who waited until ages 2-3. The following include the average costs related to age: before age 1, \$262; ages 1-2, \$339; ages 2-3, \$449; age 3-4, \$492; ages 4-5, \$546.

Meera, Muthu, Phanibabu, and Rathnaprabhu (2008) were also interested in obtaining information relating to a child's first dental visit. The children in this study were based in an Indian culture. The two main goals were to obtain the common chief complaints and the actual age of each child at their first dental visit.

Meera, Muthu, Phanibabu, and Rathnaprabhu (2008) used a retrospective study based on case records of 716 children. This was based on using three different categories of age groups. The age groups consisted of 0-3 years, 3-6 years, and 6-12 years. The chief complaints were assessed at each initial visit and were then analyzed based on this visit. A prospective study was then done to determine future success.

Meera, Muthu, Phanibabu, and Rathnaprabhu (2008) reported that 59.08% of children had their first dental visit between ages 6-12. The most common chief complaint noted was pain (42.04%) followed by dental caries (28.49%). The overall report concluded that the majority of patients experiencing pain or dental caries fell under the 6-12 age group as their first dental visit.

The American Academy of Pediatrics based their study (2003) on information regarding how ECC occurs, the type of bacteria that causes ECC, and who is most at risk for ECC. The argument presenting with this research included how important it is for a child to establish a dental home, since the dentist is usually the first one to identify the disease. The purpose of the research was to determine factors involving a reduction in caries in children, as well as more of an establishment of a dental home for patients.

The American Academy of Pediatrics (2003) established an oral health risk assessment as their tool in determining oral health care needs in children. This is used to determine the risk of caries in patients, especially young children and parents of children. Clinical observations were also methods used in this study to help determine patients at risk. With the information gathered from the risk assessment, the following groups for dental caries were recognized: children with special health care needs, children of mothers with a high caries rate, children with caries, plaque demineralization and staining, children who sleep with a bottle or are breastfed throughout the night, later order offspring, and children with a low SES.

The overall summary of the research from the American Academy of Pediatrics (2003) describes that ECC emerges from all socioeconomic groups, but is more commonly seen in the lower socioeconomic status. In order to prevent caries, the children that should be noted as “high risk” should be recognized at an early age and aggressive strategies should accompany. In order to reduce the high-risk individuals status, the research states to make sure that children have an established dental home by the age of one.

The Clinical Affairs Committee (1991) established research in hopes of promoting preventive counseling for infants, children, and adolescents. With this research, there will be more awareness of who needs preventive care and how to receive the dental care at an early age.

The Clinical Affairs Committee (1991) used updated information from an electronic database with different medical and dental literatures. Clinical trials were used for this type of research based on the past ten years. The age group that was used in this study was between birth to age eighteen. Over 100 articles were used to help aid in the research with the clinical study. Along with data, expert and consensus opinions by researches and clinicians were used.

The Clinical Affairs Committee (1991) has used their research to focus on specific recommendations for each age group range. Recommendations for ages 6-12 months include: complete oral exam and evaluation of development, oral hygiene counseling for parents, removal of any stains, assessment of child's fluoride status and feeding habits, age appropriate injury prevention, completion of caries risk assessment, any referrals or consultations to physician, and evaluation for reevaluation appointments. Ages 12-24 months include: six month recalls, assessment of feeding habits, review of fluoride status, and topical fluoride applied based on individual needs. The age group of 2-6 years involves: six month recalls, scaling and prophylaxis, pit and fissure sealants, referral for malocclusion, any referrals needed, and assessment of language and speech. Finally, there is the 12 year and older age group including: six month recalls, any removal needed for pathology, and

determining the appropriate age to transition from the pediatric office to the general office.

## CHAPTER 3

### METHODOLOGY

An interview session took place with forty parents of six-year-old children to gather demographic and background data. The interview consisted of five questions (Appendix A) about the children and their history of dental visits. After the detailed interview with these parents, the researcher then discussed important home dental care tips and explained the importance of visiting a dentist as early as possible to ensure prevention of cavities or trauma. The parents were also questioned about information that they wished they had known prior to the development of their child's teeth and ways they believe would help get the message across to other parents. Along with this interview, the project consisted of visiting several different pediatric dental offices and calculating at what age the majority of their patients have their first visit. These results were compared to the results from the interview. Once a correlation was determined, the researcher was able to interpret the findings for dissemination.

The expectations of this project overall involve bringing awareness to parents on how to prevent ECC. The purpose of the project is to recognize that children who visit the dentist at a young age will be more educated on good oral health habits, experience less anxiety and fear of the dentist, and hopefully have a lower incidence of caries.

## CHAPTER 4

### RESULTS

After interviewing forty parents of six-year-old children, the results showed significant factors leading to the importance of the overall research. The average age of a child's first dental visit was found to be age four. By the age of four, all twenty deciduous teeth have erupted in the child's mouth and have been present for at least a year. This leaves a lengthy time frame for abnormal growth and development of decay to take place without being noticed.

The average age of a child's first dental visit with cavities present was determined to be age three. There were a total of twelve children out of forty (30%) that had experienced cavities ranging from one to six cavities. The age of three was also the average age that the parents believed was the appropriate age for a child's first trip to the dentist. Every parent noted that the frequency of his or her child's dental visit was either every six months or every year. No parent marked his or her child as only visiting the dentist one time only. This shows that once a child is introduced to the dentist for the first time, they are more than likely going to continue visiting the dentist on a regular basis.

Fear or nervousness about visiting the dentist was also in the questionnaire for each parent. Overall, fear was not an issue with most of the children in the research. There were thirty-one out of forty (77.5%) participants who did not

experience fear with going to the dentist. The remaining nine out of forty participants did experience fear at their first dental visit. Several of the children that were nervous about visiting the dentist were calmer at the routine visits compared to their very first visit. This explains how important it is for a child to have a fun first visit in order to encourage less fear towards future routine visits.

Several parents made additional comments to questions asked which provided a framework about their dental beliefs. Debbie stated that she just assumed that a child would need to first visit the dentist right before they started kindergarten since this was the age her daughter was required to get shots and physical exams before school. Monica had suggested a later age for a first dental visit for her son unless there were problems prior to the first dental visit. It is important to note, though, that individual perception of what defines an issue exhibits a great deal of variability. The explanation given with ages 3-4 for a first dental visit included the children being able to understand better of what was going on and the ability to follow instructions easier. Cameron noticed that his son was traumatized by the dentist at his first visit but also commented that once he switched dentists he was no longer traumatized with the visit. Rebekah, Kathryn and Sam noted interesting tips to help make the dentist less scary to children. Kathryn's tip included having a dentist come speak to a preschool about their career and what to expect at the dental visit. Rebekah and Sam both brought up that having parents explain what to expect to the child prior to the visit would make it a smoother visit for both the parents, child, and dental professional.



Figure3: Primary Eruption Chart



## CHAPTER 5

### CONCLUSIONS

Based on the background knowledge of ECC and the research presented, it is essential for children to have early age dental visits. The American Dental Association (ADA) suggests that a child's first dental visit be between the time of the eruption of their first tooth and their first birthday. Some parents believe that this age may be too young for a child and that they will not understand what is going on, but this visit is more of a "get to know the office visit" and for parents knowledge and education. The dentist/ hygienist can educate the parents on healthy food and drink choices for children, how to brush their teeth, when to start using fluoride, when to expect eruption of primary and secondary teeth, proper steps towards prevention, and how to determine problems or pain in the oral cavity.

The importance of an early age dental visit is also critical in determining any abnormal changes in growth and development. Problems that are detected early in the oral cavity can be treated more easily and with less traumatic experiences to the child. An example of this would be orthodontics for children. As the jaw begins to grow, the dentist can determine the specific alignment and whether or not it would be best for the child to go through orthodontics to help articulate the jaw for proper function. If the parent waits too long to get this evaluated, the jaw may have already developed and what could have been a simple procedure of braces and retainers has

now turned into surgery. Along with more dental treatment comes much more cost, which could have been prevented with an early age dental visit.

After researching these individuals, it was noticed that most parents had not taken their children to the dentist simply because they were not told a specific age and the benefits of prevention were unknown. If this were the dilemma, then the solution would involve more awareness of parents regarding good oral health. There are several ways the researcher believes this could help promote early age dental visits could be promoted. Hospitals offering La Maze classes would be a great way to introduce parents to the importance of their oral health along with their babies. Expecting parents are eager to learn everything there is to keeping their baby healthy. If the message of early age dental visits can be promoted at these events, parents will be more willing to send their child at an early age in hopes to gain more education and better oral health care for their child. Since not everyone attends La Maze classes, physicians should also encourage it. Pediatricians will see the newborn child often and will be a great resource for directing parents towards the right dentist in hopes of gaining prevention and a healthier oral cavity. The dentist and hygienist should help promote early age dental visits and prevention throughout the community and when the word is spread there can be a decrease in the amount of cases of ECC.

ECC is the most common childhood disease, but it is completely preventable. With this being said, there is no reason for there to be such a high caries rate in children. Awareness and prevention are the keys to the reduction of dental caries.

It is time to spread the word throughout each community and help promote healthy teeth and healthy bodies around the world.



Figure 4: Early Dental Visit

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## Appendix A

Candidate Number: \_\_\_\_\_

Date: \_\_\_\_\_

### Interview Questionnaire:

1. At what age was your child 's first dental visit?

\_\_\_\_\_

2. How often does your child visit the dentist?

\_\_\_\_\_

3. How many cavities, if any, does your child have?

\_\_\_\_\_

4. Does your child have anxiety/fear about visiting the dentist?

\_\_\_\_\_

5. At what age do you feel is appropriate for a child's first dental visit?

\_\_\_\_\_